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MEMORANDUM FOR: Deputy Director for Administration

VIA: Director of Personnel Security

FROM: [REDACTED]

Chief, [REDACTED]

SUBJECT: Team ABC Study Results and
Polygraph Reform GoalsSUMMARY

1. Earlier in the year, the surfacing of the Ames case prompted many questions from inside and outside our organization regarding the polygraph program's policies and procedures. One question dealt with whether CIA polygraphers looked at polygraph charts differently than examiners from other agencies. In other words, was there any institutional bias on the part of CIA polygraphers? In August 1994 a study with CIA, [REDACTED] and [REDACTED] participants was conducted to answer the question. It became known as the Team ABC Study.

2. This paper, presented in two parts, first offers a short report on the methodology and results of the Team ABC Study. The three primary conclusions of the study are: 1) there was no evidence to suggest CIA examiners were biased in their chart interpretations; 2) examiners from the three agencies obtained a significant level of agreement in their analysis of the CIA charts used in the study; and 3) examiners from the three agencies had statistically significant levels of agreement with the original CIA chart interpretations, but there was room for much improvement.

3. The second part of this paper offers [REDACTED] reform goals for effecting change in a number of areas. Those areas having the greatest corrective effects on examiner agreement include: the implementation of numerical scoring systems for chart analysis; the establishment of sampling inspections to ensure quality; upgrading the in-service training program; and employing an examiner certification program. Other areas of change in

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the polygraph program include: modifications to polygraph test questions; integration of adjudicators in [] and close interaction with the new Personnel Assessment Center.

4. The Office of Personnel Security (OPS) is in the process of redefining the polygraph research program. In the past, research emphasized the development of computerized instrumentation and alternate technologies. Now OPS will focus on polygraph validity, reliability, methodology, and countermeasures. This long-term plan will be coordinated among all research participants within OPS, DoD, and the Intelligence Community.

"Team ABC Study"

A Short Report of the Interagency Analysis of CIA Periodic Polygraph Examinations

5. Internal and external organizations asked [] whether CIA polygraph outcomes are biased. The study presented here was designed to cover only one possible source of bias: examiners interpretation of polygraph exams. This study compares CIA with [] and [] examiners' interpretations.

STUDY DESIGN

6. Four examiners from the CIA, four from [] and four from [] were placed into four teams. Three [] examiners were placed in one team, three CIA examiners in another, and three [] examiners in a third team. A fourth team of examiners was composed of one examiner from each agency.

7. Each examiner was asked to review independently of any other examiners participating in the study 100 CIA polygraph examinations randomly selected from all periodic examinations conducted between 1988 and 1992. After reviewing the polygraph charts and pertinent information from the polygraph subject's file, they were required to decide whether their interpretation was No Deception Indicated (NDI), Deception Indicated (DI), or Inconclusive (INCL). Team members reviewed together the same polygraph

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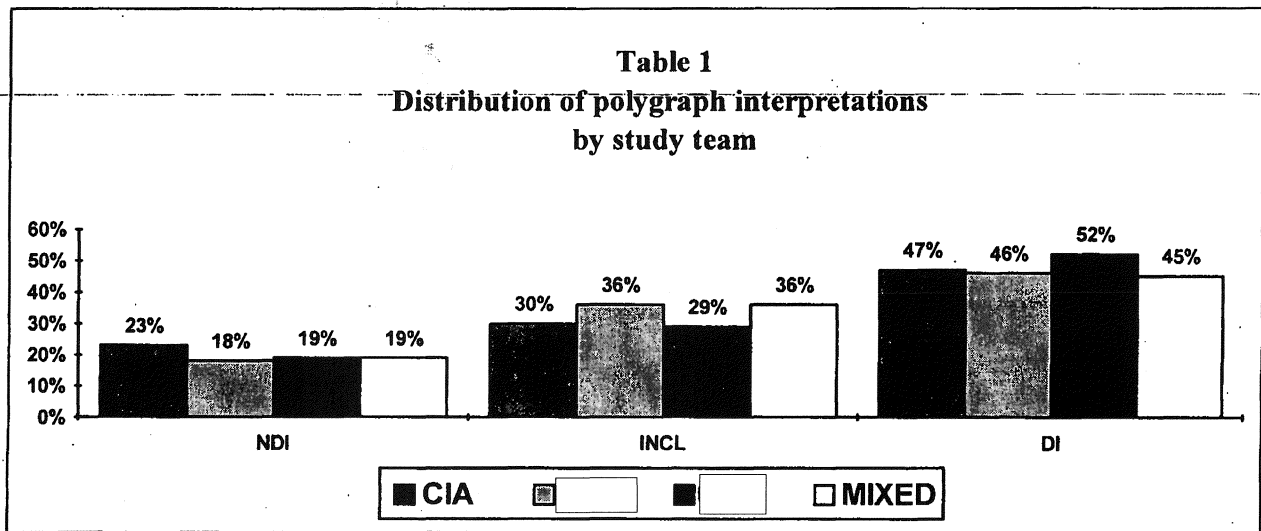
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cases they had already reviewed separately. They were asked, as a team, to come to a consensus on an interpretation. The team consensus is the focus in the results section.

RESULTS

8. Overall, there appears to be no statistically significant difference ($p < .78$)¹ between the proportion of ~~NDI~~ Inconclusive, and DI calls made by the CIA, [] and Mixed teams (Table 1). Operating under the constraints of a blind chart analysis study, CIA polygraph examiners are just as likely as examiners from other agencies to conclude a polygraph subject is Nondeceptive, Deceptive, or Inconclusive. For all 100 cases, agreement between any possible pairing of teams varied by only one percentage point.



¹ "p" denotes statistical probability that the result can be attributed to chance. Convention sets a value of .05 or less as being considered statistically significant, and any value greater than this threshold is not statistically significant. The present statistic ($p < .78$) indicates that the differences in proportions of the various polygraph decisions among the agencies are not larger than chance expectancies.

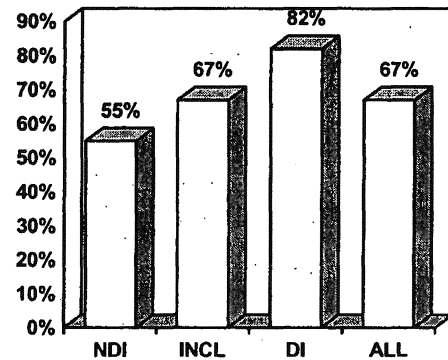
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9. The team interpretations agreed in 67% of the 100 cases used in the study (Table 2). For cases originally determined by the CIA [redacted] to be DI, the level of agreement increased to 82% but dropped to 55% for NDI cases. Regardless of the type of case, however, a test of interrater agreement using the Kappa coefficient found that there is a significant level of agreement ($p < .00$) among examiners from the three participating agencies. In other words, they agreed at a level significantly beyond what would be expected by chance alone.

Table 2
Percent agreement between teams
by type of case

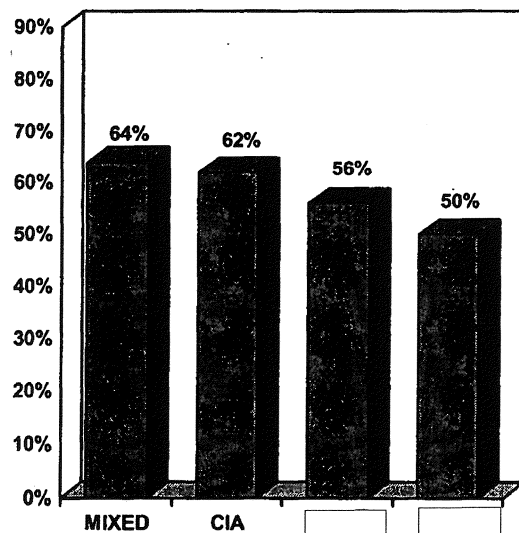


10. Each team also agreed with the original CIA calls significantly more than expected by chance ($p < .00$). The Mixed team had the highest level of agreement, 64%, with the original interpretations (Table 3). The CIA team's agreement with original calls was slightly lower at 62%.

CONCLUSIONS

11. Using blind chart analysis, CIA polygraph examiners make polygraph interpretations consistent with those of [redacted] and [redacted] examiners. Thus, no institutional bias--or trend characterizing one Agency's interpretation as distinct

Table 3
Percent agreement between teams
and original CIA interpretation



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from other agencies'--was evident in this study.

12. Although agreement in this study is statistically significant, it may seem modest as a practical matter. There is no "true" or absolutely correct level of interrater agreement. Reference to scientific professionals' agreement in other domains (see Table 4) reveals levels of interrater agreement comparable to those in this study. Reliability of CIA's polygraph interpretation is consistent with judgment reliability in some medicine and psychology studies.

Table 4
Other Studies of Interrater Agreement

<u>Classification Topic</u>	<u>Percent Agreement</u>	<u>Author</u>
Severity of Retinopathy	61%	Woolson (1987)
Psychological Disorders	56%	Fleiss (1971)
Psychological Disorders	70%	Cohen (1968)
Multiple Sclerosis	43%	Landis & Koch (1977)
Carcinoma	64%	Agresti (1990)
Child Aptitude Scoring	59-86%*	Mason (1992)
<u>CIA Study</u>		
Team Agreement	67%	
CIA Examiner Agreement	62%	
NSA Examiner Agreement	60%	
FBI Examiner Agreement	54%	
*range based on several different assessment criteria		

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POLYGRAPH REFORM GOALS

13. The same improvements, say in medical diagnosis, that could increase reliability also could increase consistency in practice among polygraphers. [] [] has undertaken a series of initiatives to increase reliability in CIA's polygraph interpretation.

14. A program plan to re-evaluate and modify a number of current practices and methods of operation in [] has resulted from the Ames case, the subsequent Team ABC Study, and the creation of the Office of Personnel Security in October 1994. In order to strengthen, improve, and further professionalize the polygraph program, [] is effecting changes in eight areas. The first four have the greatest impact on "reliability":

- NUMERICAL SCORING SYSTEMS

[] formerly employed a more subjective, visual method of polygraph chart interpretation []. Objective numerical scoring is known to sharply reduce the decision variances evidenced in the Team ABC Study. Numerical chart evaluations have a number of inherent benefits. While they are not purely objective, they reduce subjectivity to acceptable levels that are more easily understood. Numerical evaluations improve the reliability of the polygraph examination because one examiner's independent evaluation should not vary significantly from another examiner's independent evaluation, no matter when they are applied. Numbers help define and explain what an examiner sees, and an examiner can clearly demonstrate how decisions were made. The final number score represents the polygraph examiner's professional opinion as to truth or deception, based solely on the polygraph tracings. In December 1994 and January 1995, all CIA polygraph examiners were instructed in recognized objective scoring techniques, and the use of these methods became standard and required practice for all cases on 10 January 1995.

- ESTABLISHMENT OF A QUALITY ASSURANCE TEAM

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[] has established a Quality Assurance Team (QAT) whose goal on a cross-divisional basis is to eliminate errors, constantly improve the polygraph process, and improve the product we provide to our customers. Its first order of business has been to complete a Polygraph Examiner's Manual to serve as a basic reference for testing procedures in line with the rest of the professional polygraph community. This was distributed electronically to all examiners on 20 December 1994. QAT conducts sampling inspections on examinations conducted in each testing branch. If errors or non-compliance with technical and professional standards are surfaced, immediate feedback is provided, and a determination is made as to whether corrective instruction is required of examiners or management. QAT's sampling inspections began in early-December 1994. Data must be gathered for a six-month period to obtain sufficient information to analyze trends. June 1995 is the target date for its first analytical report. On 23 December 1994, the Quality Coordinator for the Agency reviewed the activities of QAT and advised that QAT was on track, taking all the right measurements, and had a good feedback system in place.

- TRAINING

[] established its own American Polygraph Association accredited training school in 1983 to prepare students for the conduct of screening examinations for CIA applicants. Although the basic training for examiners is excellent, and advanced, in-service and specialized training courses have been conducted, more needs to be done. [] has re-evaluated, and is now upgrading, its entire in-service training program. By 1 April 1995, [] will implement a formal examiner certification program and a program of in-house training in alternate testing techniques. The certification program will establish benchmarks for initial and periodic polygraph examiner qualifications and will better allow the professional progression and competency levels of the examiner cadre to be tracked and recorded throughout their careers. To produce a cadre of examiners with a measurably high level of competence, training will be provided in techniques

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involving different test formats (different question types and different order of questions), as utilized by the professional polygraph community. Examiners will be required to be certified in the use of these test techniques following the training. Refresher, advanced, and specialized training courses will be provided to examiners on a more regular basis in order to continually enhance their interpersonal skills, subject matter expertise, and CI knowledge.

- IMPLEMENT ONGOING RESEARCH PROJECTS

Standardization, reliability, and consistency are key issues in the polygraph process. There has always been a need to limit variation in the process. [] has been involved for years in both the development and procurement of computerized polygraph instruments. []

[]
A study is underway to validate a computerized scoring algorithm developed by []. Once validated, the algorithm will be applied to polygraph cases to assist examiners in their interpretation of charts and to establish a consistent baseline for chart analysis.

15. Changes in the following four areas will further strengthen the program by streamlining the process, boosting examiner productivity and reducing errors:

- POLYGRAPH TEST QUESTIONS

[] has long felt that too many issues/questions are covered during test sessions. This directly contributes to lower productivity, higher "bring back" rates (examinees requiring more than one session to complete their polygraph examination) and higher than desired Inconclusive results. To satisfy its different customers over the years, [] has complied with requests to cover more topics and ask more test questions. Narrowing the scope of testing and focusing on prioritized issues will increase the accuracy and reliability of the process. It is essential to determine whether the adjudicator/customer can apply risk management to establish different thresholds for the issues. [] has initiated a formal review of both

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the issues covered and the specific test questions utilized on all test types. [] review is first addressing changes that can be made internally, such as combining issues or clarifying the focus or scope of the issues.

- INTEGRATION OF []
[] PERSONNEL

[] needs to better understand [] needs and problems. [] need to better understand what [] can and cannot do. In the past, they have both placed representatives [] for consultation with examiners during the conduct of their cases. The representatives' guidance has prevented the continuation of unnecessary or unwarranted testing. The representatives, having a better understanding of thresholds [] were able to prevent elicitation of information that is not used in adjudications. Better communication between examiners and adjudicators will lead to a streamlined polygraph process that is speedier and more efficient for the examiner and the polygraph subject and will provide the adjudicator with the information needed. This process is currently being reimplemented.

- INTERACTION WITH THE PERSONNEL ASSESSMENT CENTER

[] has established a close working relationship with the newly created [] to ensure that polygraph examiners are provided with guidance and integrated background information prior to each polygraph examination in order to achieve the highest level of effectiveness possible.

- RECRUITMENT

The quality of the CIA's polygraph program is certainly no stronger than the quality of the examiners interacting with polygraph subjects on a daily basis. It is just as important today as it has been in the

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past to select the absolute best polygraph examiner candidates the Agency has to offer. We need to continually analyze our existing skills mix against what we need to most effectively meet customer needs. We need to look closely at candidates with [] training and experience. We test a diverse population. It is in our best interests to have a more diverse examiner corps. In trying to recruit for the future, we will seek examiner candidates with diverse occupational and personal backgrounds to better represent this Agency. A class of [] students is projected for the next Basic Polygraph Examiner Course in early-1995.

16. [] Quality Assurance Team and [] [] will be the leading players in the reform process for the polygraph program. The eight areas identified above are ones that [] has recognized as deserving attention. Our task is to have a completed plan by 1 April 1995 and to systematically work that plan. We may make adjustments along the way, but we are working toward an objective. That objective, in simplistic form, is a quality product that we can justify against standards, delivered by knowledgeable, skilled professional examiners.

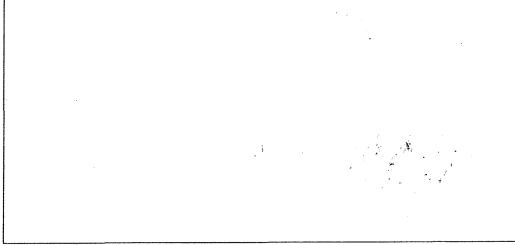
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DA/OPS (7 February 1995)



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